



Força de corte específica

Escolas STEM4inclusivas
WP2 – Caixa de ferramentas

-1-



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Co-funded by
the European Union



Determinação do componente principal do corte vigor

- Método analítico

$$F_Z = C_{Fz} \cdot t^{x_{Fz}} \cdot s^{y_{Fz}}$$

- Método quase empírico

$$F_Z = p_s \cdot t \cdot s$$



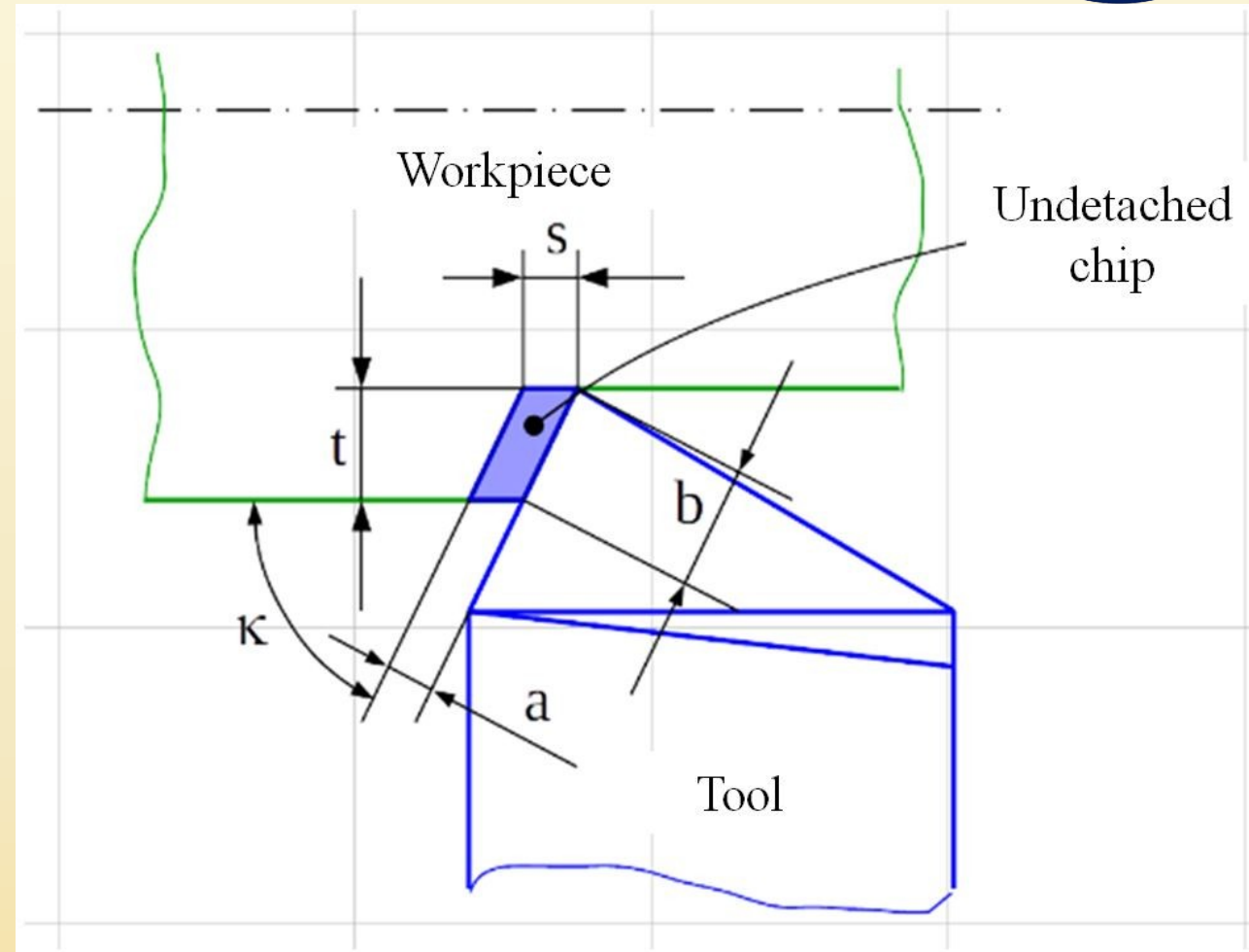


$$A = t \cdot s = a \cdot b$$

$$a = s \cdot \sin \kappa$$

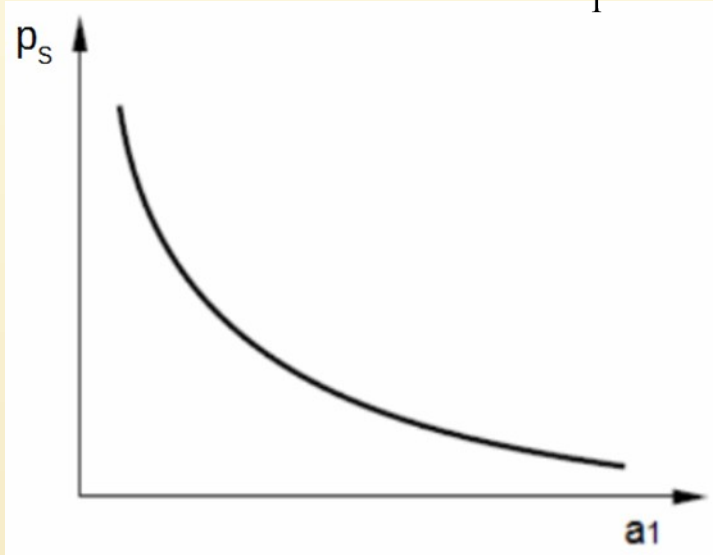
$$b = \frac{t}{\sin \kappa}$$

$$F_Z = p_s \cdot a \cdot b$$

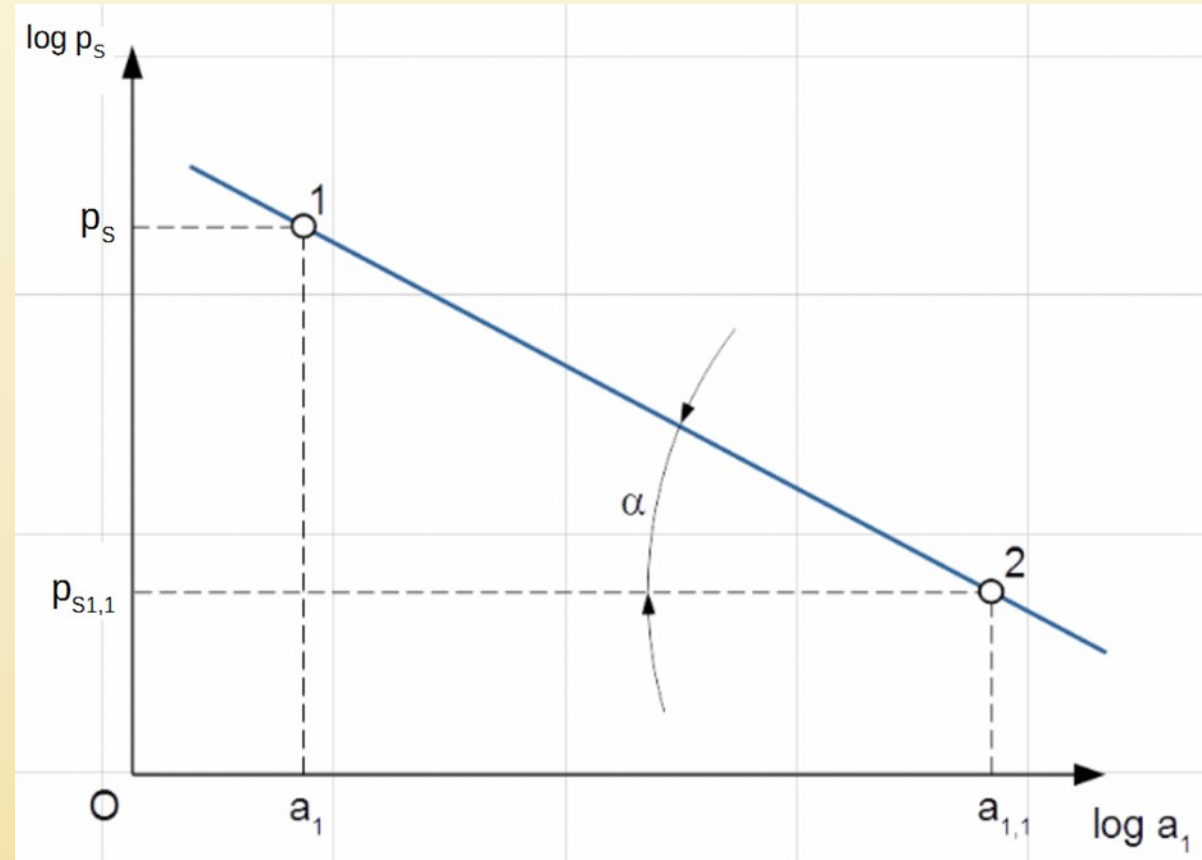




$$p_S = \frac{(1 \text{ mm})^z}{a_1^z} \cdot p_{S1,1}$$



$$\tan \alpha = \frac{\log p_S - \log p_{S1,1}}{\log a_{1,1} - \log a_1}$$





Corte vigor

$$p_S = \frac{(1\text{mm})^z}{a_1^z} \cdot p_{S1,1} \cdot K_\gamma \cdot K_v \cdot K_C \cdot K_U$$

$$K_\gamma = 1 - \frac{\gamma_r - \gamma_0}{100};$$

$$K_v = 1,03 - \frac{3 \cdot v_{as}}{10^4};$$

$$K_C = 1 \div 1,1;$$

$$K_U = 1,3 \div 1,5.$$

$$F = A \cdot p_S = t \cdot s \cdot p_S$$





Corte específico vigor

$$p_s = \frac{F_{as} \cdot v}{t \cdot s \cdot v} = \frac{L_0}{V} \left[\frac{\text{daN} \cdot \text{mm}}{\text{mm}^2} \right]$$

v – velocidade de corte [m/min.];

V – volume de cavaco removido em um minuto [$\text{mm}^3/\text{min.}$];

L_0 - trabalho de corte consumido ao remover uma camada de corte com seção de 1 mm^2 , em um minuto.

$$p_s = \frac{G \cdot L \cdot (\sin \alpha_0 - \sin \alpha_{med})}{a \cdot b \cdot l}$$

$G=100 \text{ daN}$;

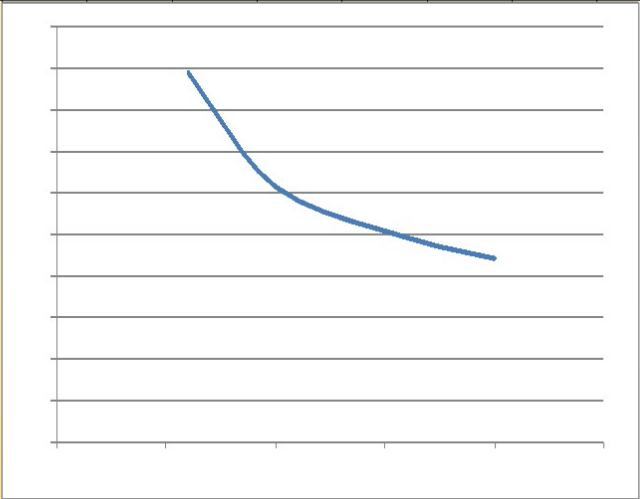
$C=400 \text{ mm}$.





Bronze

Nr. Crt.	a	Alfa 0	Alfa 0 ra	Alfa	Alfa med	Alfa m ra	G	L	b	l	pz
1	0.06	28	0.488692	13	11.66667	0.203622	10	400	10	10	178.1693
				11							
				11							
2	0.1	28	0.488692	11	9.333333	0.162897	10	400	10	10	122.9175
				7							
				10							
3	0.16	28	0.488692	6	4.333333	0.075631	10	400	10	10	98.47818
				3							
				4							
4	0.2	28	0.488692	2	1.666667	0.029089	10	400	10	10	88.07737
				1							
				2							



-7-



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

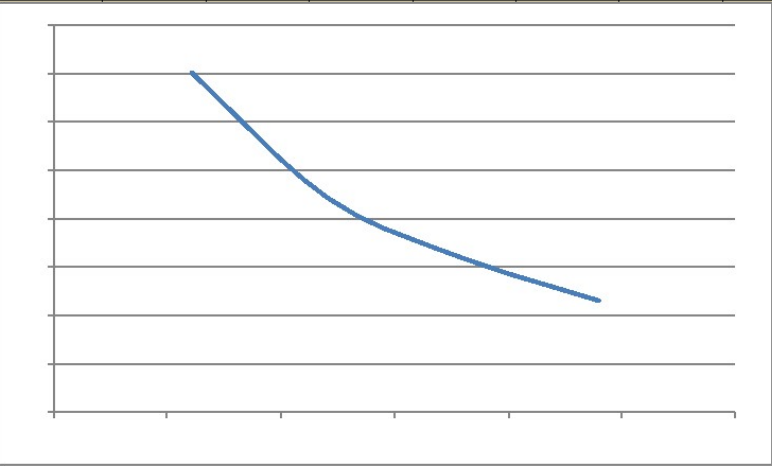


Co-funded by
the European Union

Latão



Nr. Crt.	a	Alfa_0	Alfa_0_ra	Alfa	Alfa_med	Alfa_m_ra	G	L	b	l	pz
1	0.06	28	0.488692	21	21.33333	0.372337	10	400	10	20	35.22612
				22							
				21							
2	0.12	28	0.488692	20	19.66667	0.343248	10	400	10	20	22.15401
				19							
				20							
3	0.18	28	0.488692	19	19	0.331613	10	400	10	20	15.98927
				19							
				19							
4	0.24	28	0.488692	20	19.33333	0.33743	10	400	10	20	11.53401
				20							
				18							





Alumínio

Nr. Crt.	a	Alfa_0	Alfa_0_ra	Alfa	Alfa_med	Alfa_m_ra	G	L	b	l	pz
1	0.1	28	0.488692	16	14.66667	0.255982	10	400	10	20	43.25528
				14							
				14							
2	0.2	28	0.488692	13	11.66667	0.203622	10	400	10	20	26.7254
				12							
				10							
3	0.3	28	0.488692	10	10.66667	0.186168	10	400	10	20	18.95844
				12							
				10							
4	0.4	28	0.488692	9	6	0.10472	10	400	10	20	18.24715
				4							
				5							

